

Applicant: Fugel et al.
Application No.: 10/600,486

REMARKS

Claims 1 and 4-6 are currently pending in this application, as amended. By the present Reply, claims 1 and 5 have been amended and claims 2 and 3 have been canceled. No new matter has been introduced into the application by these amendments.

Claims 1-6 were rejected under 35 U.S.C. §103 as unpatentable over DE 44 16 320 A1 (Metten). The applicants respectfully traverse this rejection.

As amended, claim 1 is directed to an axial angle disk formed in one piece which is adapted for use in a thrust bearing. The axial angle disk comprises a radial segment that forms a raceway to which first and second axially bent parts are connected that are each provided at at least one point on a periphery thereof with respective first and second holding projections that protrude radially. The projections are adapted to engage in an associated component from behind so that a captive packaged unit made up from the axial angle disk and the component is formed, and to engage in an associated recess of a connected construction so that a captive packaged unit made up of the axial angle disk and the connected construction is formed. The holding projections have a path that climbs at an angle in a direction of assembly and have at an end thereof a sloping edge that falls away in a radial direction. The first axially bent part is situated at an outer peripheral end of the radial segment, and the first respective holding projection engages a cage from behind so that a thrust bearing is formed that is made up of the axial angle disk and the cage. The second axially bent part is situated on an inner peripheral end of the radial segment and the second respective holding projection engages in an associated recess of a housing so that a captive packaged unit is formed that is made up of a thrust bearing and the housing. The holding projections are formed by stamping, and an uninterrupted metal connection is formed between the bent part

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and the holding projections. A projection height of the projections, extending in the radial direction, has a maximum size S of 2/3 of a wall thickness B of the axially bent part, and the holding projections have a rounded shape.

In contrast, Metten, which is assigned to the same assignee as the present invention, discloses the use of centering bumps (16) from the inner axially extending portion of another angle disk, as shown in detail in Figure 6. The bumps (16) are used merely for centering of the axial angle disk and are not holding projections, as recited in claim 1. The present invention provides a single axial angle disk that includes holding projections for holding both the bearing cage as well as engaging an associated recess of the housing so that a captive packaged unit is formed. The Metten axial angle disk would not allow connection to the housing in order to form such a captive unit.

This difference is further underscored by the detailed view of the projection (16), which fails to meet the requirement of the present invention of having a holding projection with a path that climbs at an angle in a direction of assembly, and an end thereof having a sloping edge that falls away in the radial direction in order to form the holding projection profile, which is shown in detail in Figure 2 of the present application. This allows for a simple and uncomplicated assembly process for assembling a captive packaged unit made up of an axial angle disk, a bearing cage and the associated component. This is neither suggested nor disclosed by Metten. Accordingly, applicants respectfully request withdrawal of the Section 103 rejection of claim 1.

Claims 4-6 depend directly or indirectly from claim 1 and should be patentable for the reasons noted above in connection with claim 1.

If the examiner believes that any additional minor formal matters need to be addressed in order to place the present application in condition for allowance, the

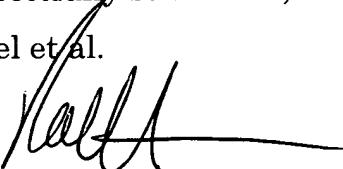
Applicant: Fugel et al.
Application No.: 10/600,486

examiner is invited to contact the undersigned by telephone at the examiner's convenience.

In view of the foregoing Amendment and Remarks, applicants respectfully submit that the present application, including claims 1 and 4-6, is in condition for allowance, and a Notice to that effect is respectfully solicited.

Respectfully submitted,

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